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## (54) SOLID AGROCHEMICAL COMPOSITION

(57)Abstract:

PURPOSE: To obtain a solid agrochemical composition stable over a long period by mixing a crystallization preventing assistant such as an alkylene glycol rosin ester to a specific agricultural herbicide having excellent herbicidal activity, melting the mixture and supporting the mixture on a solid carrier.

CONSTITUTION: This solid agrochemical composition is produced by mixing a compound of formula I [W is A-R (A is O or S; R is an alkyl, an alkenyl, an alkynyl, etc.); X is a halogen or together with W forms O-CHR<sup>5</sup>-CO-NR<sup>6</sup> (R<sup>5</sup> is H or an alkyl; R<sup>6</sup> is an alkyl, an alkenyl, etc.); Y is H or a halogen; Z is group of formula II formula III (U is O or S), formula IV or formula VI with an assistant exhibiting the action to prevent the crystallization of the compound of formula I and selected from alkylene glycol rosin esters and polyalkylene oxide rosin esters, melting the obtained mixture and supporting the mixture on a solid carrier. The composition can stably hold the agrochemical effect of the compound of formula I (e.g. the compound of formula VI) over a long period and gives slight phytotoxicity to crops.



I



II



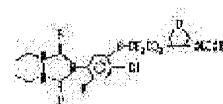
III



IV



V



VI

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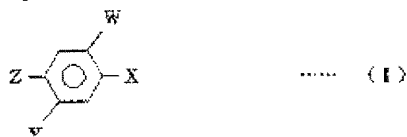
(54) 【発明の名称】 固形農薬組成物

(57) 【要約】

【目的】 長期間保存後も高活性、高選択性を維持する農薬組成物を提供する。

【構成】 (i) 下記一般式 (I)

【化1】



で表される農薬活性成分（上記式中、W、X、YおよびZは明細書中に定義するとおり）のうち少なくとも1種、および (ii) アルキレングリコールロジンエステル類およびポリアルキレンオキサイドロジンエステル類から選ばれた該農薬活性成分の結晶化防止作用を有する補助剤類のうち少なくとも1種とを混合熔融させ、固形担体に担持させたものを含有することを特徴とする固形農薬組成物。

**CLAIMS**

1. A solid agrochemical composition which is produced by mixing at least one agrochemical active ingredient, represented by the following formula 1, with one adjuvant which has a crystallization prevention activity for the agrochemical active ingredient, the adjuvant being selected from alkylene glycol rosin ester and polyalkylene oxide rosin ester, melting the obtained mixture and supporting the mixture on a solid carrier;

[Formula 1]



wherein, W represents a residue expressed with -A-R,

A represents an oxygen atom or a sulfur atom,

R represents a residue expressed with C<sub>1</sub>-C<sub>6</sub> cycloalkyl group, C<sub>2</sub>-C<sub>6</sub> alkynyl group, C<sub>2</sub>-C<sub>6</sub> alkenyl group, C<sub>3</sub>-C<sub>6</sub> alkyl group, or -CR<sup>1</sup>R<sup>2</sup>-CO-OR<sup>3</sup>,

R<sup>1</sup> and R<sup>2</sup> represent hydrogen atom, or C<sub>1</sub>-C<sub>4</sub> alkyl group,

R<sup>3</sup> represents hydrogen atom, a residue selected from C<sub>1</sub>-C<sub>6</sub> halo alkyl group, C<sub>2</sub>-C<sub>6</sub> cycloalkyl group, C<sub>2</sub>-C<sub>6</sub> alkynyl group, C<sub>3</sub>-C<sub>6</sub> alkenyl group, and C<sub>1</sub>-C<sub>6</sub> alkyl group, or the following formula 2,

[Formula 2]



(wherein, R<sup>4</sup> represents C<sub>1</sub>-C<sub>4</sub> alkyl group)

X represents a halogen atom, provided in that X may form -O-CHR<sup>5</sup>-CO-NR<sup>6</sup>- with W.

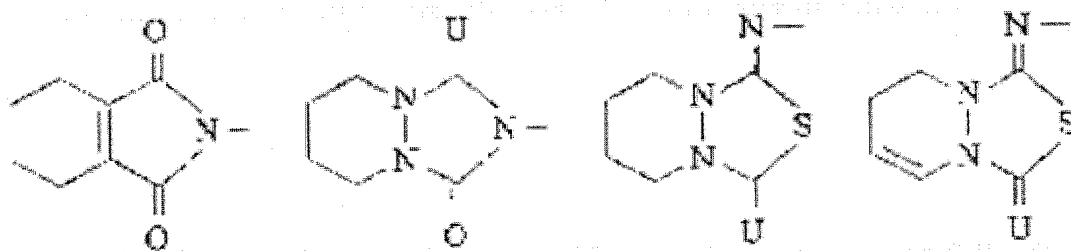
$R^5$  represents hydrogen atom or  $C_1$ - $C_4$  alkyl group,

$R^6$  represents  $C_1$ - $C_6$  cycloalkyl group,  $C_2$ - $C_6$  alkynyl group,  $C_2$ - $C_6$  alkenyl group or  $C_3$ - $C_6$  alkyl group,

Y represents a hydrogen atom or a halogen atom,

Z represents a group expressed with one of the following formula 3

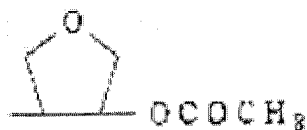
[Formula 3]



(wherein U represents an oxygen atom or a sulfur atom).

2. The solid agrochemical composition according to claim 1, wherein in formula 1, R is a residue expressed with  $C_2$ - $C_6$  alkynyl group or  $-CR^1R^2-CO-OR^3$  ( $R^1$  and  $R^2$  represent a hydrogen atom),  $R^3$  represents  $C_1$ - $C_6$  alkyl group or the following formula 4; X represents a halogen atom or the following formula 5, or W; Y represents a halogen atom; and Z is expressed with the following formula 6.

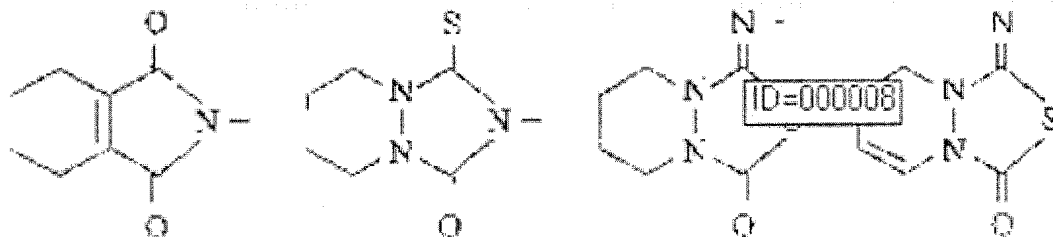
[Formula 4]



[Formula 5]

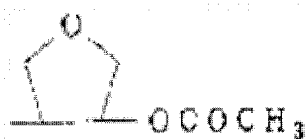


[Formula 6]

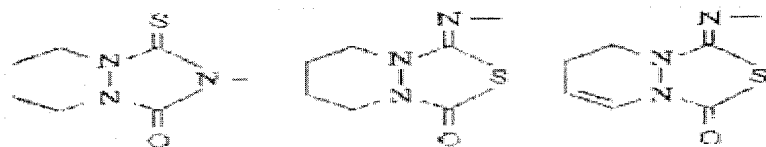


3. The solid agrochemical composition according to claim 1, wherein in formula 1, A represent a sulfur atom, R is a residue expressed with  $-CH_2COOR^3$  ( $R^3$  represents  $C_1-C_4$  of alkyl group, or the following formula 7), X and Y represent a halogen atom, and Z is represented by the following formula 8.

[Formula 7]



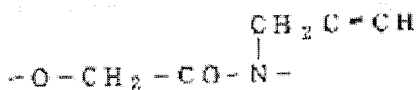
[Formula 8]



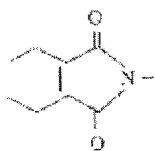
4. The solid agrochemical composition according to claim 1, wherein in formula 1, A shows an oxygen atom, R shows an alkynyl group of  $C_2-C_4$ , and X shows a halogen atom, or

W is represented by the following formula 9 or 10.

[Formula 9]

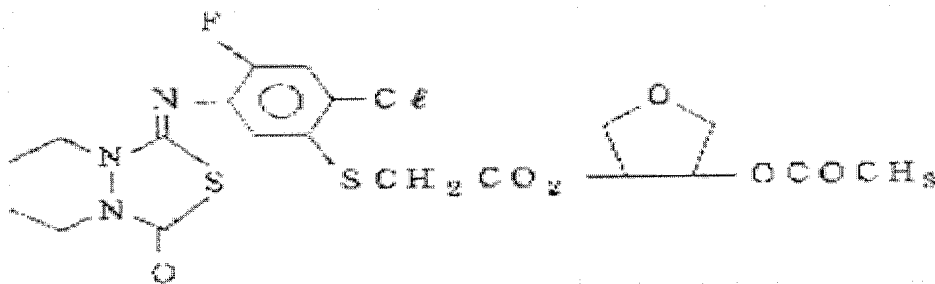


[Formula 10]

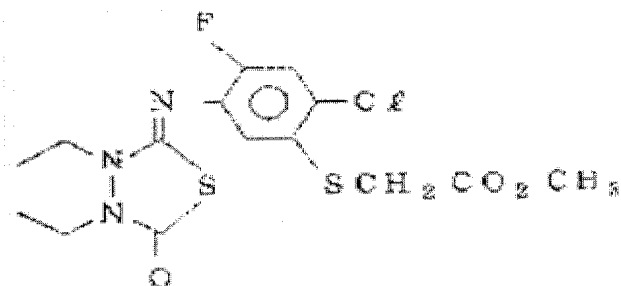


5. The solid agrochemical composition according to claim 1, wherein the agrochemical active ingredient is represented by the following formula 11 or 12.

[Formula 11]



[Formula 12]

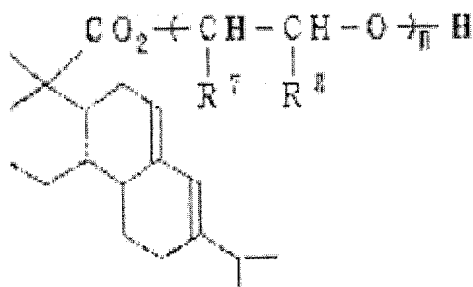


6. The solid agrochemical composition according to claim 1, wherein the weight ratio of the adjuvants, which have the crystallization prevention activity, to the agrochemical active ingredient is in a range of 0.1 to 10% by weight.

7. The solid agrochemical composition according to claim 1, wherein the weight ratio of the adjuvants, which have the crystallization prevention activity, to the agrochemical active ingredient is in a range of 0.1 to 5% by weight.

8. The solid agrochemical composition according to claim 1, wherein the moles of ethyleneoxide added in the adjuvants which have a crystallization prevention activity is in a range of 5 to 18 mol of the polyoxyethylene rosin ester.

9. The solid agrochemical composition according to claim 1, wherein a surfactant of an anionic system or a nonionic system is further added.

**Related Paragraphs**

[0029] (wherein, R<sup>7</sup> and R<sup>8</sup> represent a hydrogen atom or a methyl group, and n is an integer of 1 to 20) When the adjuvants having the crystallization prevention activity to the compound represented by the formula 1 is used at a weight ratio of 0.1 or more times, the solid agrochemical composition shows the crystallization prevention activity. The weight ratio is practically in a range of 0.1 to 10 times, and the use in a range of 0.1 to 5 times is more preferred.

[0030] The following methods may usually be used for the manufacturing method of the solid agrochemical composition comprising a molten mixture of the adjuvants which have a crystallization prevention activity for the agrochemical active ingredient; and an alkylene glycol rosin ester represented by the formula 1, or a polyalkylene oxide rosin ester. The manufacturing method is described in detail, as follows. First, the mixture is dissolved in an organic solvent, and then melted by heating in order to obtain a solid carrier support. After a cold cracking process, the solid carrier support is dissolved in an organic solvent to obtain a solid carrier support. Then, the solid carrier support is cracked after the removal of the organic solvent by the evaporation.